

CLAIM AMENDMENTS

1 1. (currently amended) A heat insulating layer with a
2 melting point above 2500°C, [[with]] a thermal expansion
3 coefficient in excess of $8 \times 10^{-6} \text{ K}^{-1}$, and a sintering temperature
4 greater than 1400°C , wherein characterized in that the heat-
5 insulating material has a perovskite structure of the general
6 formula $A_{1+r} (B'^{1/3+x} B''^{2/3+y}) O_{3+z}$ in which

7 A = at least one element of the group (Ba, Sr, Ca, Be),
8 B' = at least one element of the group (Mg, Ca, Sr, Ba,
9 Be),

10 B'' = at least one element of the group (Ta, Nb), and
11 $0.1 < r, x, y, z < 0.1$;

12 or the heat-insulating material has the perovskite
13 structure of the general formula $A_{1+r} (B'^{1/2+x} B''^{1/2+y}) O_{3+z}$ in which:

14 A = at least one element of the group (Ba, Sr, Ca, Be),
15 B' = at least one element of the group (Al, La, Nd, Gd,
16 Er, Lu, Dy, Tb),
17 B'' = at least one element of the group (Ta, Nb), and
18 $0.1 < r, x, y, z < 0.1$.

1 2. (currently amended) A heat-insulating material
2 according to claim 1 wherein [[which]] the heat-insulating
3 material has a composition wherein $r = x = y = z = 0$.

4 3. (previously presented) The heat-insulating material
5 according to claim 1 with a composition of the formula
6 $Ba(Mg_{1/3}Ta_{2/3})O_3$.

1 4. (currently amended) The use of the heat-insulating
2 material according to claim 1 as a heat-insulating coating on the
3 surface of the component.

1 5. (currently amended) The use according to the
2 preceding claim 4, further comprising, in which between the
3 component and the heat-insulating component, one or more
4 intermediate coatings of ceramic glass or metallic material is
5 provided.

1 6. (currently amended) The use according to the
2 preceding claim 5, further comprising, wherein between the
3 component and the heat-insulating layer, an intermediate layer
4 comprised of a MCrAlY alloy is provided where M = Co, [[as]] Ni
5 material for the intermediate layer.

6 7. (currently amended) The use according to the
7 preceding claim 5, further comprising, in which between the
8 component and the heat-insulating layer, an intermediate (platin-)
9 aluminide layer is provided for an intermediate layer.

10 8. (currently amended) A method of making a heat-
11 insulating material according to claim 1 characterized in that
12 wherein the starting material is provided as carbonates and/or
13 oxides corresponding to the aforedescribed stoichiometry in a
14 mixture and this mixture is subjected to a solid-state reaction
15 whereby such that the heat-insulating material thus produced has
16 the corresponding stoichiometry and the perovskite structure.

17 9. (currently amended) The method according to claim 8
18 wherein the mixture is so formed that the perovskite produced by
19 the solid-state reaction has a composition according to the
20 formula

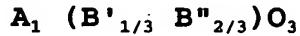


22 or according to the formula



24 with $0.1 < r, x, y, z < 0.1$.

1 10. (currently amended) The method according to claim
2 8 characterized in that the mixture is so made that the perovskite
3 after the solid-state reaction has a composition according to the
4 formula



6 or according to the formula

